

## CLAIMS

[1] An inspection apparatus for circuit board for inspecting the electrical properties of a circuit board having a plurality of electrodes to be inspected arranged  
5 in lattice, which comprises

an adaptor having a wiring board for connection, on the front surface of which a plurality of connecting electrodes have been formed in accordance with a pattern corresponding to a pattern of the electrodes to be  
10 inspected of the circuit board, which is an object of inspection, and an anisotropically conductive elastomer sheet arranged on the front surface of the wiring board for connection, and a pressing pin mechanism arranged on the back surface side of the wiring board for connection in the  
15 adaptor and having a great number of pressing pins for pressing the adaptor,

wherein the great number of the pressing pins in the pressing pin mechanism are arranged in such a manner that at least one pressing pin is located within a rectangular  
20 region partitioned by linking central points of adjacent 4 connecting electrodes in the wiring board for connection when the pressing pin mechanism and the adaptor are seen through in a thickness-wise direction thereof.

[2] The inspection apparatus for circuit board  
25 according to claim 1, wherein on the back surface of the wiring board for connection in the adaptor, a terminal electrode electrically connected to the connecting

electrode is arranged at pressing positions by all the pressing pins in the pressing pin mechanism or a pressing position by at least one specified pressing pin selected from among all the pressing pins, and an inspection  
5 electrode is formed on the tip of the pressing pin pressing the pressing position at which the terminal electrode is arranged.

[3] An inspection apparatus for circuit board for inspecting the electrical properties of a circuit board  
10 having a plurality of electrodes to be inspected arranged in lattice, which comprises

an adaptor having a wiring board for connection, on the front surface of which plural pairs of connecting electrodes each composed of a connecting electrode for  
15 current supply and a connecting electrode for voltage measurement have been formed in accordance with a pattern corresponding to a pattern of the electrodes to be inspected of the circuit board, which is an object of inspection, and an anisotropically conductive elastomer  
20 sheet arranged on the front surface of the wiring board for connection, and a pressing pin mechanism arranged on the back surface side of the wiring board for connection in the adaptor and having a great number of pressing pins for pressing the adaptor, wherein the great number of the  
25 pressing pins in the pressing pin mechanism are arranged in such a manner that at least one pressing pin is located within a rectangular region partitioned by linking central

points of adjacent 4 pairs of connecting electrodes in the wiring board for connection when the pressing pin mechanism and the adaptor are seen through in a thickness-wise direction thereof.

5           [4] The inspection apparatus for circuit board according to claim 3, wherein on the back surface of the wiring board for connection in the adaptor, terminal electrodes electrically connected to any ones of the connecting electrodes for current supply and the connecting  
10 electrodes for voltage measurement are arranged at pressing positions by all the pressing pins in the pressing pin mechanism or a pressing position by at least one specified pressing pin selected from among all the pressing pins, and inspection electrodes are formed on the tips of the  
15 pressing pins pressing the pressing positions at which the terminal electrodes are arranged.

          [5] The inspection apparatus for circuit board according to any one of claims 1 to 4, wherein the circuit board, which is the object of inspection, has projected  
20 electrodes to be inspected.

          [6] The inspection apparatus for circuit board according to claim 5, wherein the wiring board for connection in the adaptor is capable to be curved in such a manner that when the adaptor is held under pressure by the  
25 respective pressing pins in the pressing pin mechanism and the respective electrodes to be inspected of the circuit board, which is the object of inspection, portions being

applied with the pressing force by the respective pressing pins and the respective electrodes to be inspected are shifted in pressing directions.

[7] The inspection apparatus for circuit board  
5 according to any one of claims 1 to 6, wherein the anisotropically conductive elastomer sheet arranged on the front surface of the wiring board for connection is obtained by containing a great number of conductive particles exhibiting magnetism in an elastic polymeric  
10 substance, and the conductive particles are oriented so as to align in a thickness-wise direction of the sheet, thereby forming a plurality of chains by the conductive particles.

[8] The inspection apparatus for circuit board  
15 according to claim 7, wherein the anisotropically conductive elastomer sheet arranged on the front surface of the wiring board for connection is such that chains by the conductive particles are formed in a state dispersed in a plane direction.

20 [9] The inspection apparatus for circuit board according to claim 8, wherein the anisotropically conductive elastomer sheet arranged on the front surface of the wiring board for connection has a thickness of 30 to 300  $\mu\text{m}$ .

25 [10] The inspection apparatus for circuit board according to any one of claims 1 to 9, wherein the adaptor has an anisotropically conductive elastomer sheet arranged

on the back surface of the wiring board for connection.

[11] An inspection process for circuit board for inspecting the electrical properties of a circuit board having a plurality of projected electrodes to be inspected  
5 arranged in lattice, which comprises

using an adaptor having a wiring board for connection and an anisotropically conductive elastomer sheet arranged on a front surface of the wiring board for connection, and a pressing pin mechanism, on which a great number of  
10 pressing pins for pressing the adaptor have been arranged, and comprises the steps of

arranging the adaptor on the circuit board, which is an object of inspection, so as to bring the anisotropically conductive elastomer sheet thereof into contact with the  
15 circuit board to attain a state that the pressing pin mechanism has been arranged in such a manner that at least one pressing pin is located within a rectangular region partitioned by linking central points of adjacent 4 electrodes to be inspected in the circuit board when the  
20 adaptor and the circuit board are seen through in a thickness-wise direction thereof, and

pressing the adaptor by the respective pressing pins of the pressing pin mechanism to bring the anisotropically conductive elastomer sheet in the adaptor into contact  
25 under pressure with the electrodes to be inspected of the circuit board, thereby attaining an inspectable state that each of the electrodes to be inspected of the circuit board

have been electrically connected to a tester,

wherein the wiring board for connection in the adaptor is capable to be curved in such a manner that portions being applied with the pressing force by the  
5 respective pressing pins and the respective electrodes to be inspected are shifted in the pressing direction.

[12] A wiring board for connection for intervening between a circuit board having a plurality of electrodes to be inspected arranged in lattice and a tester to inspect  
10 the electrical properties of the circuit board, which comprises

a plurality of connecting electrodes formed in accordance with a pattern corresponding to a pattern of the electrodes to be inspected of the circuit board, which is  
15 an object of inspection, on a front surface thereof and a plurality of terminal electrodes electrically connected to the connecting electrodes on a back surface thereof,

wherein the plurality of the terminal electrodes are arranged in such a manner that at least one terminal  
20 electrode is located within a rectangular region partitioned by linking central points of adjacent 4 connecting electrodes when the wiring board for connection is seen through in a thickness-wise direction thereof.

[13] A wiring board for connection for intervening  
25 between a circuit board having a plurality of electrodes to be inspected arranged in lattice and a tester to inspect the electrical properties of the circuit board, which

comprises

plural pairs of connecting electrodes each composed of a connecting electrode for current supply and a connecting electrode for voltage measurement and formed in accordance with a pattern corresponding to a pattern of the electrodes to be inspected of the circuit board, which is an object of inspection, on a front surface thereof and a plurality of terminal electrodes electrically connected to any ones of the connecting electrodes for current supply and the connecting electrodes for voltage measurement on a back surface thereof,

wherein the plurality of the terminal electrodes are arranged in such a manner that at least one terminal electrode is located within a rectangular region partitioned by linking central points of adjacent 4 pairs of connecting electrodes when the wiring board for connection is seen through in a thickness-wise direction thereof.